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L14: Entry 2 of 3 File: USPT Dec 26, 2000

US-PAT-NO: 6165782
DOCUMENT-IDENTIFIER: US 6165782 A

TITLE: Method and means for producing high titer, safe, recombinant lentivirus vectors

DATE-ISSUED: December 26, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Naldini; Luigi	San Carlos	CA		
Dull; Thomas	San Francisco	CA		
Farson; Deborah A.	Oakland	CA		
Witt; Rochelle	San Francisco	CA		

US-CL-CURRENT: 435/320.1; 435/455, 435/456

CLAIMS:

We claim:

1. A lentivirus transfer vector comprising a 5' LTR and a 3' LTR, each of which contains a U3 region, wherein a part or all of a regulatory element of the U3 region of the 5' LTR is replaced by another regulatory element, operable in a mammalian cell, which is not endogenous to said lentivirus.

2. The transfer transfer vector of claim 1, wherein one or more nucleotide bases of the U3 region of the 3' LTR are deleted.

3. The transfer vector of claim 1, wherein said regulatory element not endogenous to said lentivirus is a cytomegalovirus enhancer, promoter or enhancer/promoter.

4. The transfer vector of claim 1, wherein said regulatory element not endogenous to said lentivirus is a Rous sarcoma virus enhancer, promoter or enhancer/promoter.

5. The transfer vector of claim 1, wherein said transfer vector further comprises a heterologous gene.

6. The vector of claim 1, wherein said lentivirus is human immunodeficiency virus (HIV).

7. The transfer vector of claim 2, wherein said U3 region deleted is all of said U3 region except for a 5' terminal dinucleotide and an att sequence.

8. The transfer vector of claim 7, wherein said U3 region deleted includes a TATA box sequence.

9. The transfer vector of claim 6, wherein said HIV is HIV-1.

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(FILE 'HOME' ENTERED AT 15:00:20 ON 09 OCT 2002)

FILE 'MEDLINE, CANCERLIT, EMBASE, CAPLUS, BIOTECHDS' ENTERED AT 15:01:59 ON 09 OCT 2002

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L1         18232 S TAT OR ACCESSORY GENES OR AUXILIARY GENES OR NONESSENTIAL GEN
L2         48354 S VIP OR VPU OR VPX OR NEF OR TAT
L3         17624 S L1 AND L2
L4        830454 S DELETE# OR DISRUPTED OR NONESSENTIAL OR ABSENT OR LACK##
L5          1353 S L4 AND L1
L6          1059 S L5 AND TAT
L7          7828 S GAG AND POL
L8            43 S L7 AND L6
L9            25 DUP REM L8 (18 DUPLICATES REMOVED)
L10         1059 S TAT AND L4
L11          597 S L10 AND HIV
L12            2 S L11 AND NONESSENTIAL
L13            0 S L0 AND L7
L14          265 S L10 AND REPLICATION
L15           47 S L14 AND (POL OR GAG)
L16           28 DUP REM L15 (19 DUPLICATES REMOVED)
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L14: Entry 1 of 3 File: USPT Aug 6, 2002

US-PAT-NO: 6428953
DOCUMENT-IDENTIFIER: US 6428953 B1

TITLE: Method and means for producing high titer, safe, recombinant lentivirus vectors

DATE-ISSUED: August 6, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Naldini; Luigi	San Carlos	CA		
Dull; Thomas	San Francisco	CA		
Farson; Deborah A.	Oakland	CA		
Witt; Rochelle	San Francisco	CA		

US-CL-CURRENT: 435/5; 435/320.1, 435/325, 435/366, 435/369, 435/455, 435/456, 435/457, 435/6, 435/91.1, 435/91.3, 435/91.33, 435/91.4, 435/91.42

CLAIMS:

We claim:

1. A lentivirus packaging plasmid lacking sequences upstream from gag endogenous to said lentivirus and lacking sequences downstream from env endogenous to said lentivirus.

2. The packaging plasmid of claim 1, wherein said packaging plasmid comprises a gag, a pol or gag and pol genes.

3. The packaging plasmid of claim 1, wherein said packaging plasmid carries a non-functional tat gene.

4. The packaging plasmid of claim 1, wherein said lentivirus is human immunodeficiency virus (HIV).

5. The packaging plasmid of claim 4, wherein said HIV is HIV-1.

6. A method for producing a recombinant lentivirus vector comprising: a) transforming a cell with: i) at least one lentivirus packaging plasmid lacking sequences upstream from gag endogenous to said lentivirus and lacking sequences downstream from env endogenous to said lentivirus, and said at least one packaging plasmid comprises a gag, a pol or gag and pol genes; and ii) an expression plasmid not endogenous to said lentivirus which carries an env gene not endogenous to said lentivirus; to yield a packaging cell; b) multiply transforming said packaging cell with a lentivirus transfer vector which comprises a heterologous gene to yield a producer cell; c) culturing said producer cell in a medium; and d) separating said producer cell from said medium to recover said recombinant lentivirus vector from said medium.

7. The method of claim 6, wherein said packaging cell carries a non-functional tat gene.

8. The method of claim 6, wherein said lentivirus transfer vector comprises a 5' LTR and a 3' LTR, each of which contains a U3 region, wherein a part or all of a regulatory element of the U3 region of the 5' LTR is replaced by another regulatory element, operable in a mammalian cell, which is not endogenous to said lentivirus.

9. The method of claim 8, wherein one or more nucleotide bases of the U3 region of the 3' LTR are deleted.

WEST Search History

DATE: Wednesday, October 09, 2002

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ			
L14	6165782	3	L14
L13	L11	9	L13
L12	l9	3	L12
DB=USPT; PLUR=YES; OP=ADJ			
L11	l10 same l7	9	L11
L10	l4 or l3	124	L10
L9	l8 same L7	3	L9
L8	l6 or l5	71	L8
L7	lack?? or disrupted or absent	100085	L7
L6	l2 with l3	4	L6
L5	l2 with l4	68	L5
L4	vpr with vif with tat with nef	106	L4
L3	auxiliary genes	21	L3
L2	HIV or lentivir$	15828	L2
L1	6312682	1	L1

END OF SEARCH HISTORY